

DISPLAY HOUSING FOR A DIGITAL DISPLAY SCREEN

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to Australian patent application number 2015903862 filed Sep. 22, 2015, and claims the benefit thereof, and which is incorporated by reference herein in its entirety.

[0002] Field

[0003] The present invention relates to a display housing for a digital display screen.

[0004] Background

[0005] Digital displays are increasingly used for the purpose of advertising and/or providing information to consumers in a digital format. Known digital displays comprise display screens that are housed in or on a display housing which may be wall mounted or which may be floor or ground mounted depending on the specific circumstances in which the display is required. For example, a wall mounted display may be used in a shop or at a train station platform whereas a floor or ground mounted housing may be used outside a shop or restaurant.

[0006] The display content is provided by a computer that is operatively associated with the display screen to provide a continuous display feed to the display screen. The computer is housed within the display housing. The computer must remain cool enough during operation that it does not overheat and fail, as this would lead to a disruption in the continuous operation of the display output. The requirement for cooling is amplified when the digital display housing is used outdoors, particularly in circumstances in which the computer may be subjected to high environmental temperatures.

[0007] Known display housings utilise electronic airflow devices such as fans or thermostatically controlled environmental enclosures with air conditioning units for the purpose of keeping the computer at a desired temperature. Whilst such systems can be effective at maintaining the temperature of the computer, they are subject to servicing and potential failure over time, since the components required to cool the computer require regular maintenance. The components add additional cost both at the time of installation and during the lifetime of the display housing.

Summary of Invention

[0008] Embodiments of the present invention overcome or ameliorate one or more of the above described disadvantages. There is disclosed herein an embodiment of a display housing for a digital display screen, the display housing comprising a display screen enclosure adapted to receive a display screen and a computer housing arranged to receive a computer associated with the display screen for providing display content thereto, the computer housing having at least one air intake arranged at a first surface thereof and at least one air outlet arranged at a second surface thereof so as to define an airflow path between the at least one air intake and the at least one air outlet, the computer housing being adapted to receive the computer at a location in the airflow path; and wherein the display screen enclosure is arranged relative to the computer housing such that a fan disposed in a rear portion of a display screen received in the display

screen enclosure is located adjacent the at least one air outlet of the computer housing during use.

[0009] The display housing in the above described embodiment utilises a fan built into the rear of the display screen to cool the computer by drawing warm air in the computer housing that has been heated by the computer through the air outlet and into the fan via the display screen enclosure. This action in turn causes air to be drawn into the computer housing at the air intake such that, whilst the fan is operational, a constant airflow stream passes through the computer housing. The computer is located between the air inlet and the air outlet such that the airflow cools the computer as it is drawn through the computer housing without the need for additional electronic components, air conditioning units or other equipment, thereby saving installation and maintenance costs. This in turn allows the housing to have a small footprint that can be installed into a greater range of areas when compared with known devices that require further fans and/or air conditioning units.

[0010] The at least one air outlet in the described embodiment may comprise a ventilation port having an inlet in fluid communication with an interior of the computer housing and an outlet arranged to direct air away from the computer housing and into the display screen enclosure.

[0011] The outlet end of the ventilation port may also be arranged to direct air generally horizontally away from the computer housing and into the display screen enclosure.

[0012] In an embodiment, the ventilation port comprises an angled conduit having a first generally vertical portion with a lower inlet arranged in fluid communication with an interior of the computer housing and a second generally horizontal portion arranged at an angle to the first generally vertical portion and having an inlet in fluid communication with the first generally vertical portion, and an outlet end that is arranged in fluid communication with the display screen enclosure.

[0013] The outlet end of the second generally horizontal portion may be angled at a slight downward angle relative to the inlet thereof.

[0014] In this embodiment, airflow can be directed away from the computer in the interior of the computer housing and into the display screen fan via the display screen enclosure. Angling the second portion of the ventilation conduit at a slight downward angle can prevent the ingress of rain into the conduit, thereby protecting the computer and other electrical components such as wiring, power supply and a circuit breaker that are also housed within the computer housing.

[0015] In an embodiment, the computer housing includes a computer mounting for receiving a computer thereon. In another embodiment, the computer housing includes a plurality of computer mountings for receiving a plurality of computers thereon.

[0016] In an embodiment, the computer housing includes a plurality of air intakes and at least one air outlet for each computer housed within the computer housing.

[0017] The at least one air intake may be located in a surface or wall of the computer housing at a height position that is lower than the height position of the computer mounting. The at least one air outlet may be located in a surface or wall of the computer housing at a height position that is higher than the height position of the computer housing. In this arrangement, as the air temperature in the computer housing increases, it rises and flows over a com-